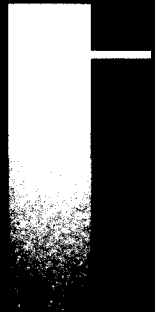


RS  
15

# Three Levels of Stock of Concern

Least



## YIELD CONCERN

- Chronic inability to maintain expected yields above escapement needs over a four or five year period

## MANAGEMENT CONCERN

- Chronic inability to maintain escapements for a salmon stock within specific management objectives for the fishery

## CONSERVATION CONCERN

- Chronic inability to maintain escapements for a stock above a sustained escapement threshold (SET)

Greatest

Andy Coeck

## **Northern Cook Inlet Stocks of Concern: We Are Still in Trouble**

8 of 14 statewide stocks of concern are in Northern Cook Inlet. GRAPHIC #1: Figure 9: (pg. #18-BOF/MSB booklet)

Northern District returns of some sockeye and king salmon stocks have plummeted to such low levels that their reproduction is at risk.

Ocean conditions are affecting king salmon. Factors significantly affecting sockeye salmon occur in freshwater and in Upper Cook inlet, including interception.

Some stock declines are extremely disturbing. Consider Shell Lake sockeye:

- Shell Lake escapement has dropped from 69,800 in 2006 to 215 in 2016.
- A department study estimated , adult sockeye potential production from Shell as 10.3% of the entire Susitna Drainage.
- Cook Inlet Aquaculture Association, (CIAA), estimated Shell Lake should provide 10% of Susitna Drainage sockeye smolt.
- Shell Lake sockeye smolt have dropped from 83,000 in 1987 to just 12 in 2016 as measured by CIAA.

Susitna sockeye are less productive than Kenai and Kasilof sockeye, which return 4.5 fish per spawner on average. Susitna sockeye return less than 1.5 fish per spawner. GRAPHIC #2: Figure 13 (pg. 22 BOF/MSB booklet) Therefore, they are overfished at much lower harvest rates than Kenai sockeye. GRAPHIC: One extra vs. seven extra: (pg. 17 of Patty/Stefan booklet)

King Salmon: 5 Northern king salmon stocks are currently listed as a management concern, with 2 additional stocks listed as a yield concern.

5 more king salmon stocks (Little Willow Creek, Montana Creek, Clear Creek, Prairie Creek, and Chulitna River) now meet Yield Concern criteria.

Coho Salmon: Jim Creek / McRoberts Creek: This formerly large producer of sport harvested coho salmon seems to meet Yield Concern criteria.

Little Susitna River: Average annual sport coho harvest has dropped 62% over a 5 year period, so this stock seems to meet Yield Concern.

### **Action Taken**

In 2014 the board adopted management plan changes to conserve and rebuild mixed stocks by moving harvest of Kenai Peninsula stocks closer to their point of origin.

## Action Requested

Opportunity for public participation in Northern District / Susitna Stock of Concern issues should be provided at this Meeting.

The Board and the Department needs to continue protecting Stocks of Concern – particularly Susitna sockeye.

The Board and the Department needs to review all action plans to assure compliance with the Sustainable Salmon Fisheries Policy (SSFP).

Susitna sockeye are Yield Concern. Continuing declines and escapement failures qualify this stock for listing as Management and Conservation Concern.

Please evaluate 5 additional king stocks for Yield Concern.

Please evaluate 2 Northern District coho stocks for Yield Concern.

The Commission supports 3 proposals from the Soldotna Work Session:

- EF-F16-037: Establish Shell Lake sockeye as Conservation Concern.
- EF-F16-039: Designate Susitna sockeye as Management Concern.
- EF-F16-040: Establish a Susitna River and West Cook Inlet a Stock of Concern Recovery Plan, identify rebuilding goals, objectives, and delisting criteria.

*Andrew N. Couch*

Table 1. Coho salmon effort, harvest, and escapement Jim Creek drainage, 1993-2016.

	Effort	Harvest	Foot index count		Total Index	Weir Count
			McRoberts <sup>a</sup> Creek	Upper Jim Creek		
1993	6,824	2,878	503	535	1,038	5,532
1994	9,658	3,946	506	2,119	2,625	6,451
1995	10,893	3,549	702	1,288	1,990	
1996	7,561	3,911	72	439	511	
1997	5,349	1,786	701	563	1,264	
1998	5,272	4,197	922	560	1,482	
1999	6,860	2,612	12	320	332	
2000	10,975	5,653	657	2,561	3,218	
2001	13,028	8,374	1,019	575	1,594	
2002	17,989	14,707	2,473	1,630	4,103	
2003	13,474	6,415	1,421	393	1,814	
2004	19,342	11,766	4,652	1,045	5,697	
2005	19,605	10,114	1,464	1,883	3,347	
2006	25,271	19,259	2,389	1,750	4,139	
2007	21,342	11,848	725	1,150	1,875	
2008	27,874	17,545	1,890	1,029	2,919	
2009	16,486	11,573	1,331	1,193	2,524	
2010	16,140	8,442	242	420	662	
2011	9,810	3,132 <sup>b</sup>	261	229	490	
2012	7,474	1,858 <sup>b</sup>	213 <sup>c</sup>	495	708	
2013	8,474	3,258	663	1,029	1,692	
2014	9,376	3,045	122	618	740	
2015	3,425	2,910 <sup>b</sup>	571	374	945	3,572
2016		<sup>b</sup>	106	307	413	1,764
2001-2010						
mean	19,055	12,004	1,761	1,107	2,867	
2011-2015						
mean	7,712	2,841	366	549	915	

10 yr.  
average  
12,004

5 yr.  
average  
2,841

Shows  
76%  
Decline

<sup>a</sup> SEG 450-700

<sup>b</sup> fishery restricted or closed early. - 4 times in past 6 years

<sup>c</sup> foot survey conducted late. Failed to attain goal 4 of past 6 yrs.

76% decline in average annual coho harvest (2001-2010) compared to 2011-2015. Stock of Yield Concern

-Knik Arm drainage coho salmon escapement counts, 2012-2016.

Year	McRoberts Creek (Sim Cr.)
2012	213
2013	663
2014	122
2015	571
2016	106
SEG	450-1,400

range

5 year average count = 335

This average is less than the 450 minimum of the escapement range.

Little Susitna River coho salmon sport harvest 1996-2015 (20-yr).

	<u>Harvest</u>
1996	16,753
1997	7,756
1998	14,469
1999	8,864
2000	20,357
2001	17,071
2002	19,278
2003	13,672
2004	15,307
2005	10,203
2006	12,399
2007	11,089
2008	13,498
2009	8,346
2010	10,662
2011	2,452
2012	1,618
2013	5,229
2014	6,922
2015	8,880
<u>Average</u>	<u>11,241</u>

10 yr. average harvest 13,153

5 yr. average harvest 5,030

Shows 62% harvest decline.

Effort, harvest, and catch data collected at the Little Susitna Public Use Facility fee booth, 2007-2016.

Year	<sup>a</sup> July 14-Sept 1 Angler count	July 14- Sept 1 Coho harvest	May 1-May 31 Angler count	May 1-May 31 Chinook harvest	May 1-May 31 Chinook catch
2007	5,396	4,649	607	106	ND
2008	6,180	6,169	757	63	ND
2009	5,919	5,496	764	61	ND
2010	5,008	4,814	784	63	ND
2011	3,919	2,787	781	41	ND
2012	1,520	1,050	288	19	ND
2013	2,592	2,704	0	0	0
2014	2,811	2,984	276	22	41
2015	5,095	5,052	326	38	43
2016	1,397	776	236	33	38

ND= no data

<sup>a</sup> fee booth start dates: May 21 (2007), May 22 (2008), May 16 (2009), May 22 (2010), May 20 (2011), May 18 (2012), June 1 (2013), May 17 (2014), May 21 (2015), May 27 (2016).

Note: Coho harvest usually less than 1 fish per angler day.

2016 shows extremely low harvest and effort. These numbers are not get available through Statewide Sport fish harvest survey. The fee booth survey numbers show the trend.

May King Salmon numbers show low harvest during this time frame both before and after emergency restrictions.

Appendix A5. Eastside Susitna River drainage Chinook salmon harvest by fishery, 1977-2015.

Year	Willow Creek	Lt. Willow Creek	Kashwitna River	Caswell Creek	Sheep Creek	Goose Creek	Montana Creek	Birch Creek	Sunshine Creek	Talkeetna River <sup>a</sup>	Other <sup>b</sup>	Total
1977	137	16			259		415			25	204	1,056
1978	47	0			256		408			12	163	886
1979	459	0		156	10		312		10	312	39	1,298
1980	289	32		215	45		559		13	172	45	1,370
1981	585	0		249	0		661		57	373	277	2,202
1982	629	0		471	0	0	241	0	52	450	220	2,063
1983	534	0	231	272	0	0	504	0	105	934	272	2,852
1984	774	37	0	586	0	0	1,522	0	125	1,272	112	4,428
1985	1,063	25		527	0	0	979	0	771	871	106	4,342
1986	1,017	872	73	327	1,778	145	2,796	290	327	908	36	8,569
1987	1,987	711	116	88	1,610	334	1,726	44	319	1,639	29	8,603
1988	2,349	937	0	578	1,847	218	1,070	28	303	1,762	47	9,139
1989	2,846	507	11	357	1,116	385	1,708	28	368	2,372	85	9,783
1990	3,237	387	6	330	1,537	504	478	0	465	2,358	121	9,423
1991	3,208	684	41	305	1,519	288	575	47	230	2,025	161	9,083
1992	8,884	1,023	16	592	2,663	1,033	3,078	101	365	3,338	214	21,307
1993	8,626	1,200	38	531	2,300	633	4,054	9	280	4,729	288	22,688
1994	5,980	745	78	562	1,349	361	3,111	108	297	2,144	235	14,970
1995	2,742	436	18	397	746	226	1,004	0	132	2,126	45	7,872
1996	2,690	896	21	128	1,397	437	1,612	22	53	3,585	182	11,023
1997	3,135	699	10	30	550	298	2,181	30	53	3,800	203	10,989
1998	2,793	546	15	226	700	348	1,471	83	116	3,846	328	10,472
1999	4,988	1,344	83	142	2,558	371	3,279	134	11	3,701	264	16,875
2000	3,782	578	160	561	851	258	1,728	223	472	2,740	421	11,774
2001	4,573	941	74	238	1,420	160	2,646	65	93	2,866	428	13,504
2002	3,591	580	217	115	928	403	2,026	35	38	2,616	146	10,695
2003	3,922	510	373	26	1,284	350	1,242	167	154	1,276	195	9,499
2004	2,818	445	125	23	914	335	1,071	0	25	2,473	315	8,544
2005	2,466	621	112	394	878	150	1,328	287	205	1,960	52	8,453
2006	2,141	449	210	264	707	27	1,672	97	211	1,561	0	7,339
2007	2,258	870	223	190	964	31	1,294	0	0	2,476	31	8,337
2008	1,101	505	237	30	589	134	1,188	46	431	1,479	94	5,834
2009	499	85	212	17	393	0	257	0	0	1,982	210	3,655
2010	218	169	214	0	153	0	371	26	56	1,013	368	2,588
2011	282	33	172	0	213	0	362	0	16	1,087	545	2,710
2012	13	0	8	0	0	0	13	0	0	113	56	203
2013	0	0	0	0	0	0	0	0	0	0	18	18
2014	0	0	0	0	0	0	0	0	0	0	31	31
2010-2014												
Mean	103	40	79	0	73	0	149	5	14	443	204	1,110
2015	0	0	0	0	0	0	0	0	0	0	258	258

2016 — No legal in-unit harvest allowed.

<sup>a</sup> Talkeetna River and tributaries including Clear Creek.

<sup>b</sup> Includes lakes and streams.

Lack of King Salmon harvest 2012-2016 (5 yrs.) plus ADF&G's expectation for no legal in-unit harvest again for 2017 elevate each of these King Salmon stocks to Yield Concern.  
 (Some already are stock of Concern.  
 7.



Eastside Susitna River drainage Chinook salmon harvest by management unit, 2011-2015.

Year	Parks Hwy	Upper Susitna	Talkeetna	Chulitna
	Unit 2	Unit 3	Unit 5	Unit 6
2011	1,078	*	1,087	113
2012	34	*	113	0
2013	0	*	0	0
2014	0	*	0	0
2015	0	*	0	0
2011-2015				
Mean	222		240	23

\* Statewide harvest information not available likely due to low number of respondents.

Note: No Legal harvest allowed in 2016  
 Expectation no legal harvest in 2017.